

Figure S1 Oligonucleotide primers used in this study

Primer	Sequence	Size
1856fHd3	TGCGGAAAGCTTGACTTGGGATTCAATTG	421bp
1856rxba1	CTATGCTCTAGACGAAATCGACGCCGGCT	
1857fHd3	TGCGGAAAGCTTGAACCGGTATCGGCATCATC	457bp
1857rxba1	CTATGCTCTAGAGCACGGCGTCGCGGTCCCAGA	
1867fHd3	TGCGGAAAGCTTGCCGGACGTAATCACCTTC	394bp
1867rxba1	CTATGCTCTAGACGACTCGGAAACCAGCGTAC	
1869Fhd3	TGCGGAAAGCTTGTTCGGCTCCTCGCG	474bp
1869Rxba1	CTATGCTCTAGAGTCAGGTCGAGCACTTGC	
1857-confirm	CATTCGAGCTGCCACACA	2.6bp
Tetwsal1F	TCAGCTGTCGACATGCTCATGTACGGTAAG	
1857-confirm	ACTTTCACCAACAATGACTG	2.6kb
Tetwsal1F	TCAGCTGTCGACATGCTCATGTACGGTAAG	
1867-confirm	CAACGCCTAGACTGAAGC	2.6kb
Tetwsal1F	TCAGCTGTCGACATGCTCATGTACGGTAAG	
1869-confirm	GCGTTCCGGTGCACTCGATG	2.6kb
Tetwsal1F	TCAGCTGTCGACATGCTCATGTACGGTAAG	
Tetwsal1F	TCAGCTGTCGACATGCTCATGTACGGTAAG	2.7kb
Tetwsal1R	GCGACGGTCGACCATTACCTTCTGAAACATA	
1856EcorVF	GACAAGGATATCATGCATCACCACCATCACCACATCACATTGCCAACCTGTCC	1.9bp
1856Xba1	GACAAGTCTAGAAACTGCGTTGGTGTGCCGG	
1857Nco1F	TGCACGCCATGGCTCATCACCACCATCACCACATCACACTTCACCAACAATGACTG	1.6kb
1857Xba1R	CTATGCTCTAGATTATGCTGGCAAGGCCAGACG	
1869EcorVF	GACAAGGATATCATGCATCACCACCATCACCACATCACGCCAGAACACCGCCACC	2.3kb
1869Xba1	CTATGCTCTAGATCAGCTAACGCCACGGCCTTG	

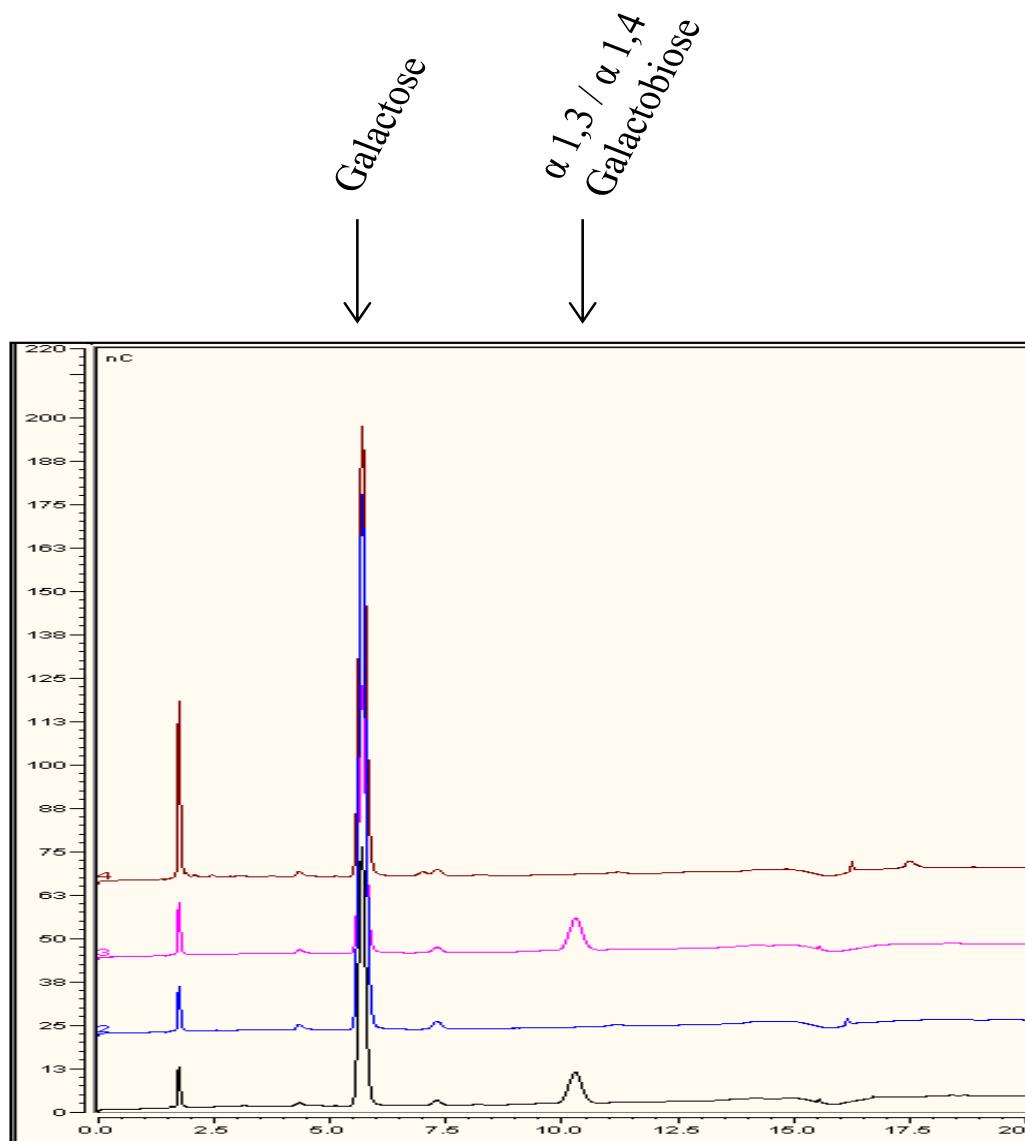
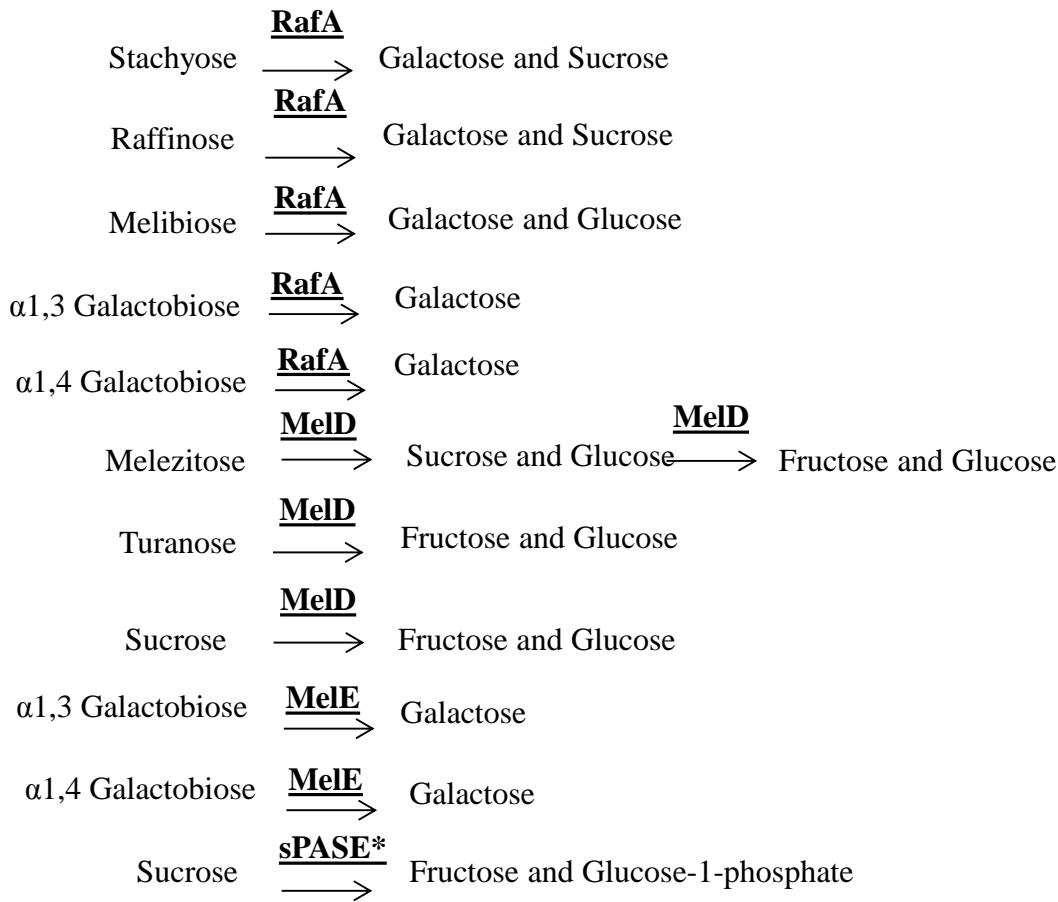


Figure S2 HPAEC-PAD analysis indicating α 1,3 and α 1,4 galactobiose breakdown 0.1 mg ml^{-1} by the purified recombinant proteins MeIE and RafA in 20 mM MOPS buffer (pH 7.0) over 24 hours. Graph I and Graph II: α 1,3 and α 1,4 galactobiose incubated with MeIE, where liberation of galactose is visible as a chromatographic peak eluted at 5.9 minutes; Graph III and graph IV : α 1,3 and α 1,4 galactobiose incubated with MeIE, where liberation of galactose is visible as a chromatographic peak eluted at 5.9 minutes; Breakdown products indicated with black compound arrows. Chromatographic positions of carbohydrate standards are indicated by dashed arrows above the chromatogram.



*sPASE: Sucrose phosphorylase

Figure S3 Proposed sugar metabolism pathways